Document made available under the Patent Cooperation Treaty (PCT)

International application number: PCT/US05/003084

International filing date: 27 January 2005 (27.01.2005)

Document type: Certified copy of priority document

Document details: Country/Office: US
Number: 60/539,361
Filing date: 27 January 2004 (27.01.2004)

Date of receipt at the International Bureau: 03 March 2005 (03.03.2005)

Remark: Priority document submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b)

1288535

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APPLICATION NUMBER: *60/539,361*
FILING DATE: *January 27, 2004*
RELATED PCT APPLICATION NUMBER: *PCT/US05/03084*

Certified by

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PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

Express Mail Label No. **EL738801795US**

INVENTOR(S)

Given Name (first and middle [if any])	Family Name or Surname	Residence (City and either State or Foreign Country)
Donald A.	**Stevens**	**Winchester, VA**

☐ *Additional inventors are being named on the _____ separately numbered sheets attached hereto*

TITLE OF THE INVENTION (500 characters max)

FASTENER FREE PLANKING AND FRAMING SYSTEM

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ENCLOSED APPLICATION PARTS *(check all that apply)*

☒ Specification *Number of Pages* 7 ☐ CD(s), Number

☒ Drawing(s) *Number of Sheets* 7 ☐ Other (specify)

☐ Application Data Sheet. See 37 CFR 1.76

METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT

☐ Applicant claims small entity status. See 37 CFR 1.27.

☒ A check or money order is enclosed to cover the filing fees.

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The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

☒ No.

☐ Yes, the name of the U.S. Government agency and the Government contract number are: _____

Respectfully submitted,

SIGNATURE Richard L. Byrne

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Date 1/27/04

REGISTRATION NO. *(if appropriate)* 28,498

Docket Number: 4417-032419

USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

PROVISIONAL PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF:	ATTORNEY'S DOCKET NUMBER
Donald A. STEVENS	4417-032419

ENTITLED

"Fastener Free Planking and Framing System"

Mail Stop Provisional Application
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

EXPRESS MAIL CERTIFICATE

"Express Mail" Label Number EL738801795US

Date of Deposit January 27, 2004

I hereby certify that the following attached paper or fee

PROVISIONAL APPLICATION FOR PATENT COVER SHEET (1 page in trip.);
SPECIFICATION (7 pp.); SEVEN (7) SHEETS OF DRAWINGS;
and check for $80.00

is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. §1.10 on the date indicated above and is addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Linda L. Marlowe
(Typed name of person mailing paper or fee)

Linda L. Marlowe
(Signature of person mailing paper or fee)

FASTENER FREE PLANKING AND FRAMING SYSTEM

ABSTRACT

The present invention is a two-part system comprised of planking having (2) continuous male <ribs>, in a tear-drop shape, on the underside of the member and a framing system that has the reciprocal shape adapted into the framing member that receives the planking. The underside of the planking containing the tear-drop shape is adapted to secure into the reciprocal shape of the framing system without the use of any fasteners.

BACKGROUND OF THE INVENTION

This invention relates generally to deck and dock construction and more particularly to both composite and extruded plank structures for deck and dock construction and the like.

Exterior decks are considered to be the most popular addition to homes throughout the United States today. Decks are places where people can extend their living space beyond the walls of their home. Decks are built out of a variety of materials and are fabricated in a variety of designs.

Typically, decks and similar structures are constructed with horizontal planking materials and are fastened to an underlying structural frame. The most popular planking and structural framing material is pressure treated wood. Pressure treated wood contains a harmful toxins; one of them is called Copper-Chromium Arsenic (CCA). It is designed to extend the life of the product in exterior elements and protect it from weather and insect infestation, such as termites. However, pressure treated wood planking tends to warp, rot, splinter and require periodic maintenance; problems which are inherent only in wood and accelerated in exterior climates.

Other alternative planking materials are plastic/wood composite, synthetic, extruded plastics, extruded metals, cold-rolled metals, and extruded aluminum, etc. The structural frame for the majority of the decks built in the United States is constructed out of pressure treated wood due to the familiarity and availability of the product.

Attaching the planking to the structural frame with fasteners, through the surface into the underlying structure, is the most commonly accepted method in the industry. There are other methods that conceal the fastening system from the underside using special clips, bracketts and the like; however this typically requires the same amount or additional fasteners to adequately connect planking to the supporting substructure.

Attaching the planking to the structural frame through the top planking surface yields unsightly blemishes to the decking surface. Typically, planking members require two fasteners to be installed through its surface into the underlying substructure (joists) to be adequately installed. More specifically, where planking member crosses over the underlying substructure, two fasteners must be installed.

Attaching the planking to the structural frame through the bottom planking surface using specialty clips is a slow and tedious process requiring more skilled labor and fasteners to adequately install. There are often space requirements to adequately install subsurface fastening systems.

If nailed, these fasteners can work themselves out of the substructure, just above the surface, and cause injury. Special screws can reduce the chances of nail popping but are typically more expensive since they must be non-corrosive to avoid weathering and often require specialty tools to fasten them. Fastening the planks to the substructure using screws is the most advantageous method however it requires some skill to properly place so that the fastening holes align somewhat consistently with the others.

Wood structures have many disadvantages: they rot, warp, split, splinter, burn, require annual maintenance, burn, get eaten by termites, are only produced in limited pre-cut lengths, and are not recyclable just to name a few. In order to extend the life of wood structures, special preservatives, like Copper-Chromium Arsenic (CCA) are applied to them. However these chemicals have been found to be toxic and the growing environmental impacts concerns have led the Environmental Protection Agency (EPA) to begin nationwide bans on these chemicals starting January 1, 2004. There will be serious impacts on the industry like lack of product supply, increased costs and product capabilities.

It is obvious that an alternative framing system that eliminates fastening of the planking must be developed. If it is possible to produce an alternative underlying framing structure that does not require chemicals treatment to make them effective, then that must be developed as well. Currently there are no solutions that integrate popular planking systems like composite and extruded decking materials with the underlying substructure without the use of special fasteners like screws, nails or clips, etc.

It is also clear that no other alternatives to attach the planking to the underlying substructure have not been addressed in prior art.

OBJECTS AND SUMMARY OF THE INVENTION

One of the two general objects of the present invention is to provide a planking member that has a special shape integrated on the underside of the planking, which is used to attach itself to the underlying structure without fasteners for use with deck or dock arrangement.

The other main object of the present invention is the underlying substructure that has the reciprocal tear-dropped shape adapted on its side, also called the flange, of the structural member,

which is designed to receive the planking member (above) and permanently fasten without the use of any fasteners <when> and used with a deck or dock arrangement.

A more specific object of the present invention is to provide a planking member which has an integrally formed (tear-drop) like shape on the underside which provide a means to attach itself to a reciprocating shape found in the underlying substructure, also known as the structural frame.

Another object of the present invention is to provide a planking member in which the shape is generally formed, pressed, milled, extruded, etc. from various types of materials in a various profiles to yield specific bearing capacities over an open framed underlying substructure. The shape found on the underside of the planking is designed to fit securely, once pressure is applied, into the reciprocating pocket found on the underlying substructure.

Another object of the present invention is to provide siding members in which the shape is generally formed, pressed, milled, extruded, etc. from various types of materials in a various profiles to cover or sheath a framed vertical or diagonal substructure. The shape found on the underside of the siding is designed to fit securely, once pressure is applied, into the vertical or diagonal frame with the reciprocating pocket without the use of fasteners.

The final object of the present invention is to provide a vertical board (plank) member for use with fence and barrier arrangement, which is adapted in a similar fashion as described in the deck and dock arrangement mentioned above.

Briefly, and in accordance with the foregoing, the present invention comprises a planking member, for use with deck, dock, fence and barrier arrangements, having a special (tear-drop)shape formed during manufacturing into the underside of the planking member. On the supporting substructure, also known as the underlying frame, each member contains the reciprocating shape that

has been adapted into the flange(s) of one or two sides to receive the planking and attached together, with pressure, without the use of fasteners.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a partial (cross-section view) section of two plank members with the integrally formed shaped along the under side of the member and the underlying structure with receptor pockets thereof;

FIG. 2 is a partial (horizontal view) section of two plank members with the integrally formed shaped along the under side of the member and the underlying structure with receptor pockets thereof;

FIG. 3 is an end view of various composite planking shapes

FIG. 4 is an end view of various extruded plastic or metal planking shapes

FIG. 5 is a partial sectional view of siding material and the structural frame which it would attach too.

FIG. 6 is a partial perspective view of a deck/dock frame

FIG. 7 is an elevation and sectional view of a fence

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT (S)

While this invention is susceptible to embodiment in many different forms, there is shown in the drawings and will be herein described in detail, a specific embodiment with the understanding that the present disclosure it to be considered an exemplification of the principles of the invention, and is not intended to limit the invention to the embodiment illustrated.

It should be noted that dimensional relationships between members of the illustrated embodiment may vary in practice or may have been varied in the illustrations to emphasize certain features of the invention.

These modifications, variations, options, and alterations include but are not limited to the following: Porches, Benches, Gazebos, Decks of any kind, Hot Tub/Spa decks, Screened enclosures, Pavilions, Property or yard enclosures, Fencing, Barrier Walls, Booths, Stands, Children's play structure/enclosure, Storage bins and sheds, Trellises, Boat mooring accessories, Boat/watercraft lifts, Various cross-sections of planking shapes, Various colors, Any combination of wood, metal, PVC, and Composite shapes, Any combination of welding, adhesives, metal, composite, & wood, Coatings, sealants, pigments, and paints used throughout the invention. It is intended by the applicant to include all such modifications, options, and alterations insofar as they come within the scope of the claims, appended claims, or the equivalent thereof.

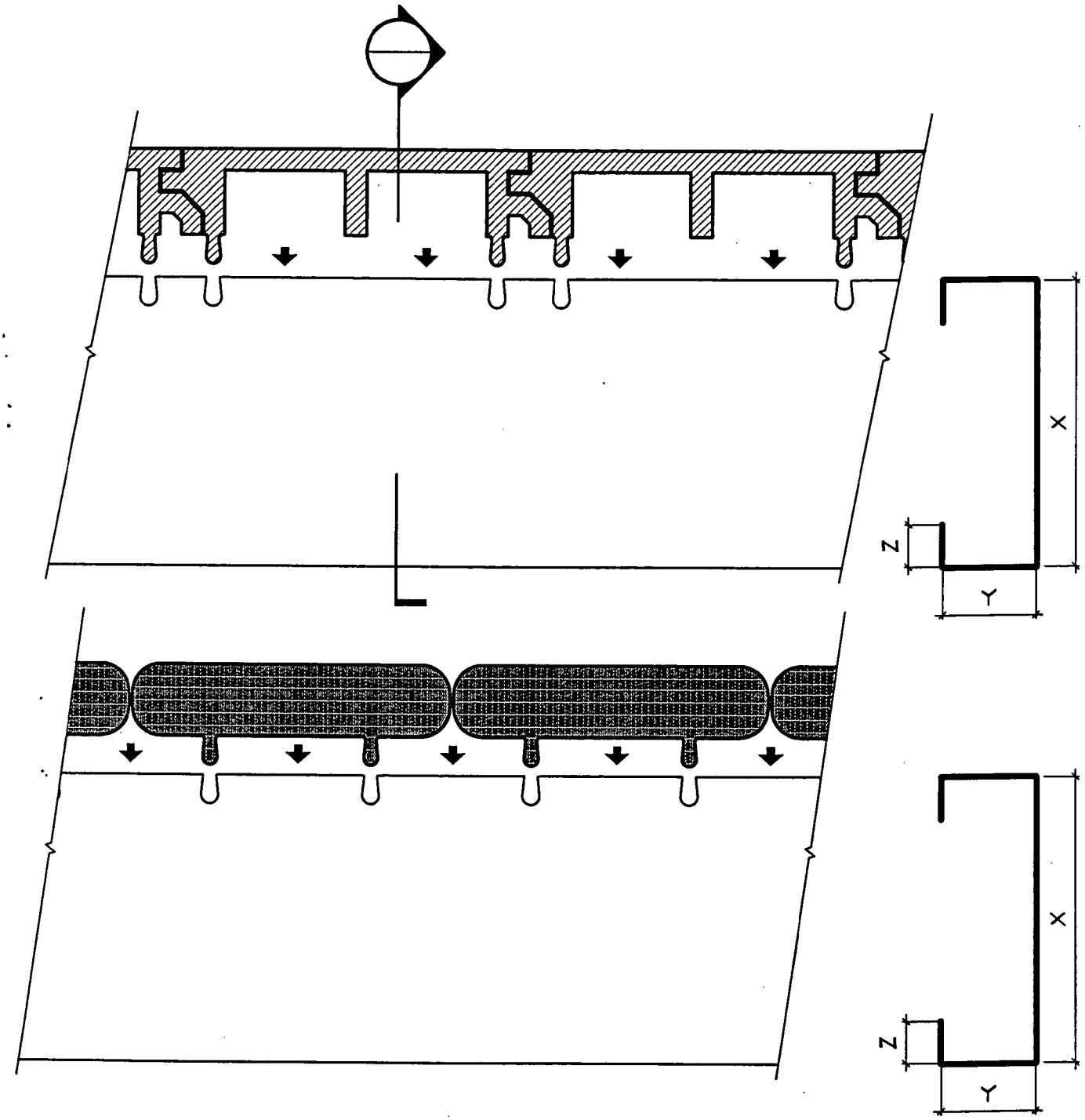
CLAIMS

I claim:

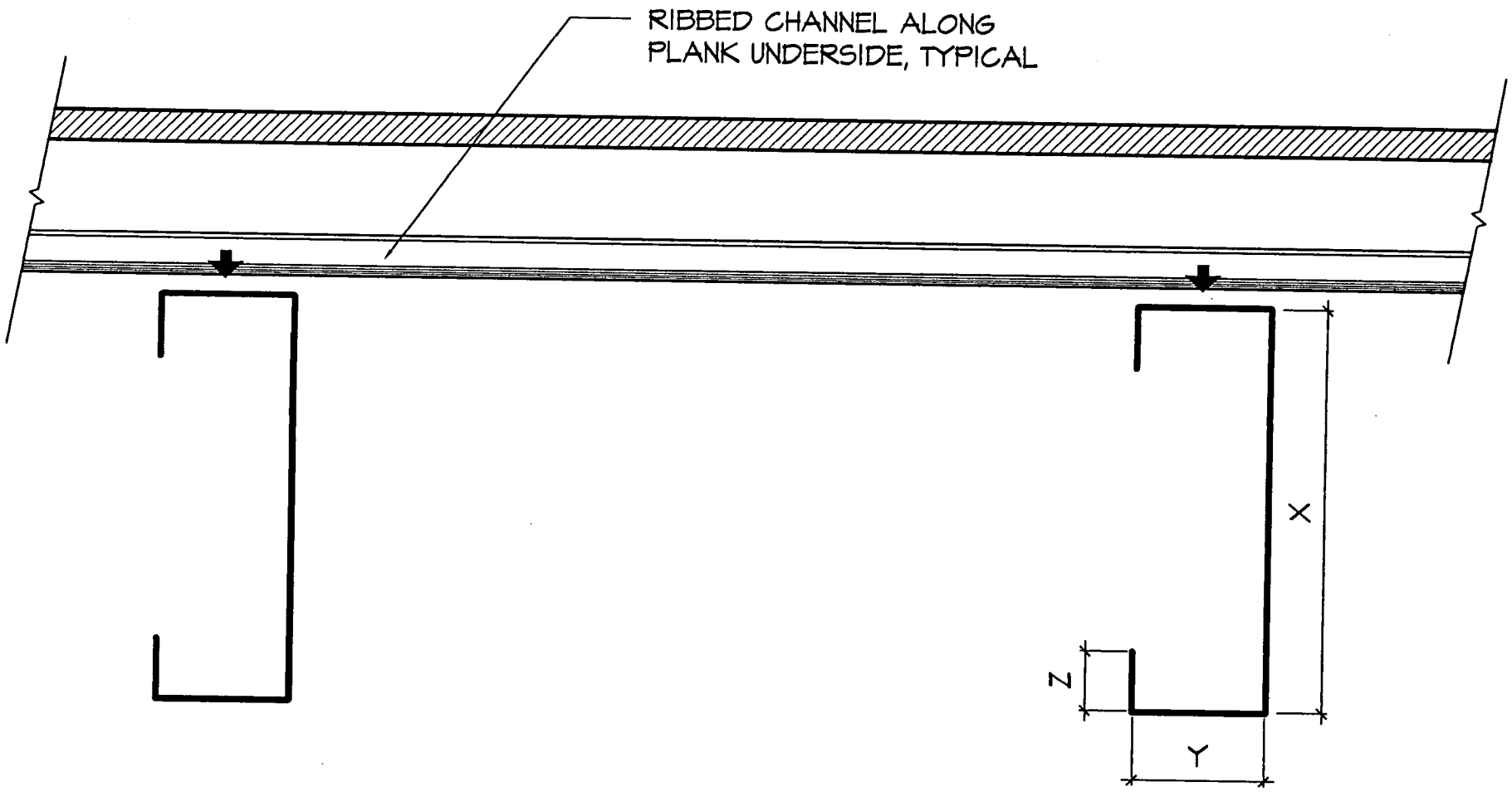
1. A planking member for deck or the like integrally formed of a composite, plastic or metal material, said plank member comprising: tear-dropped shaped ribs (male component) formed along the underside and running continuously on said planking.
2. A framing member for the deck structure or the like integrally formed of composite, plastic, metal or wood material, said framing member comprising: a reciprocating tear-drop shape formed in the flange of said framing member which is adapted to permanently receive the planking member without the use of fasteners.

3. The planking member, as in claim 1, further comprises tear-drop shaped longitudinal channels along any side of the member.
4. A construction method, comprised of planking having (2) continuous male <ribs>, in a tear-drop shape, on the underside of the member and a framing system that has the reciprocal shape adapted into the framing member that receives the planking. The underside of the planking containing the tear-drop shape is adapted to secure into the reciprocal shape of the framing system without the use of any fasteners.
5. A planking member that can be used as siding.
6. A planking member that can be used as fencing boards.

FIGURE 1.

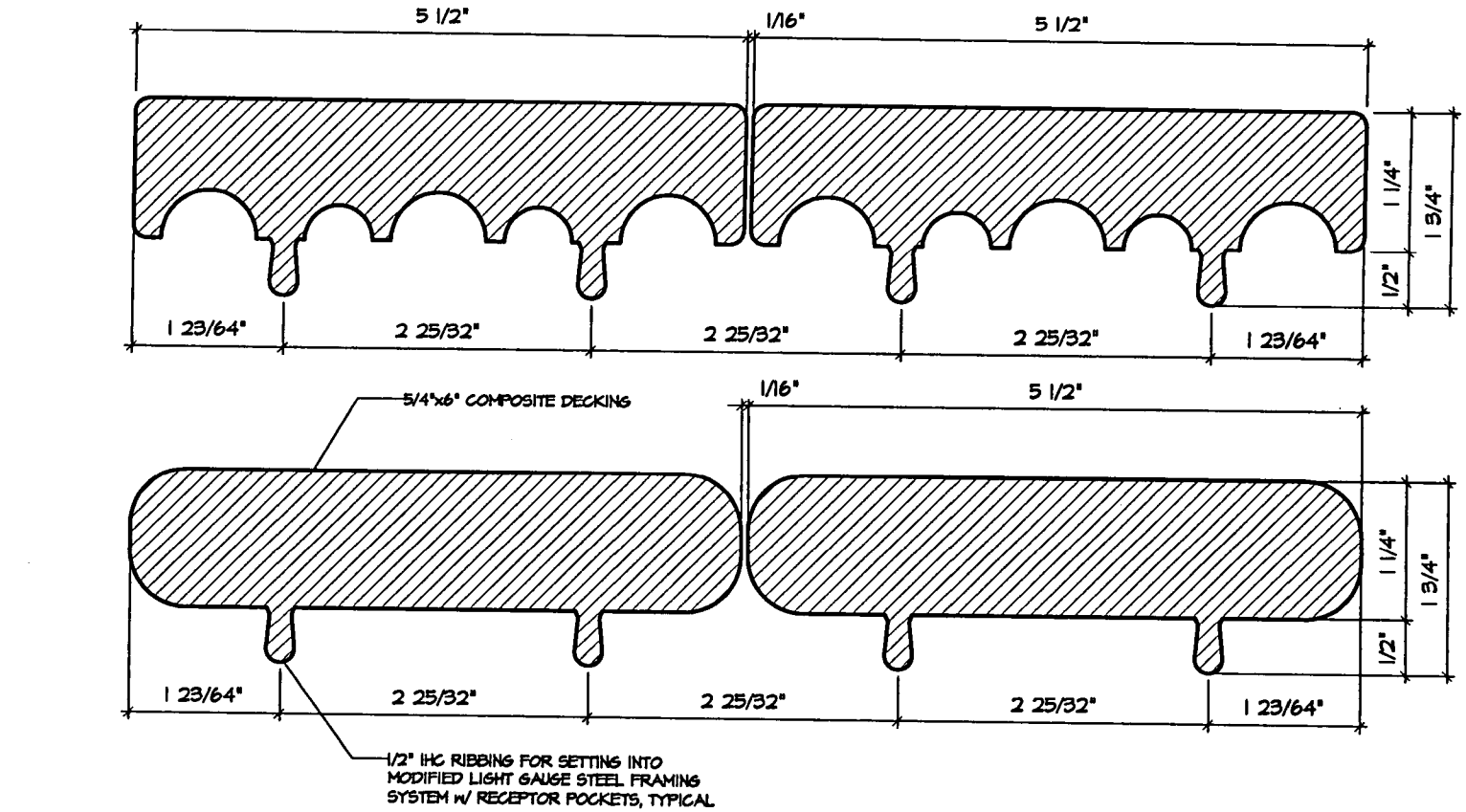


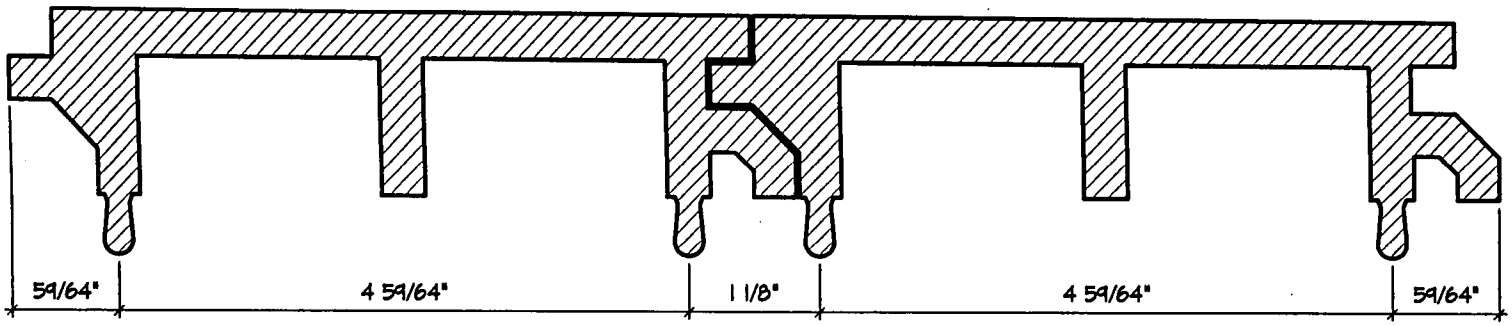
SYNTHETIC/COMPOSITE DECKING
W/ INTEGRATED IHC 1/2" RIBBING FOR SELF-SETTING INTO
IHC LIGHT GAUGE STEEL FRAMING SYSTEM



1/2" RIBBED CHANNEL, SELF-SETTING
EXPANDED METAL LATH

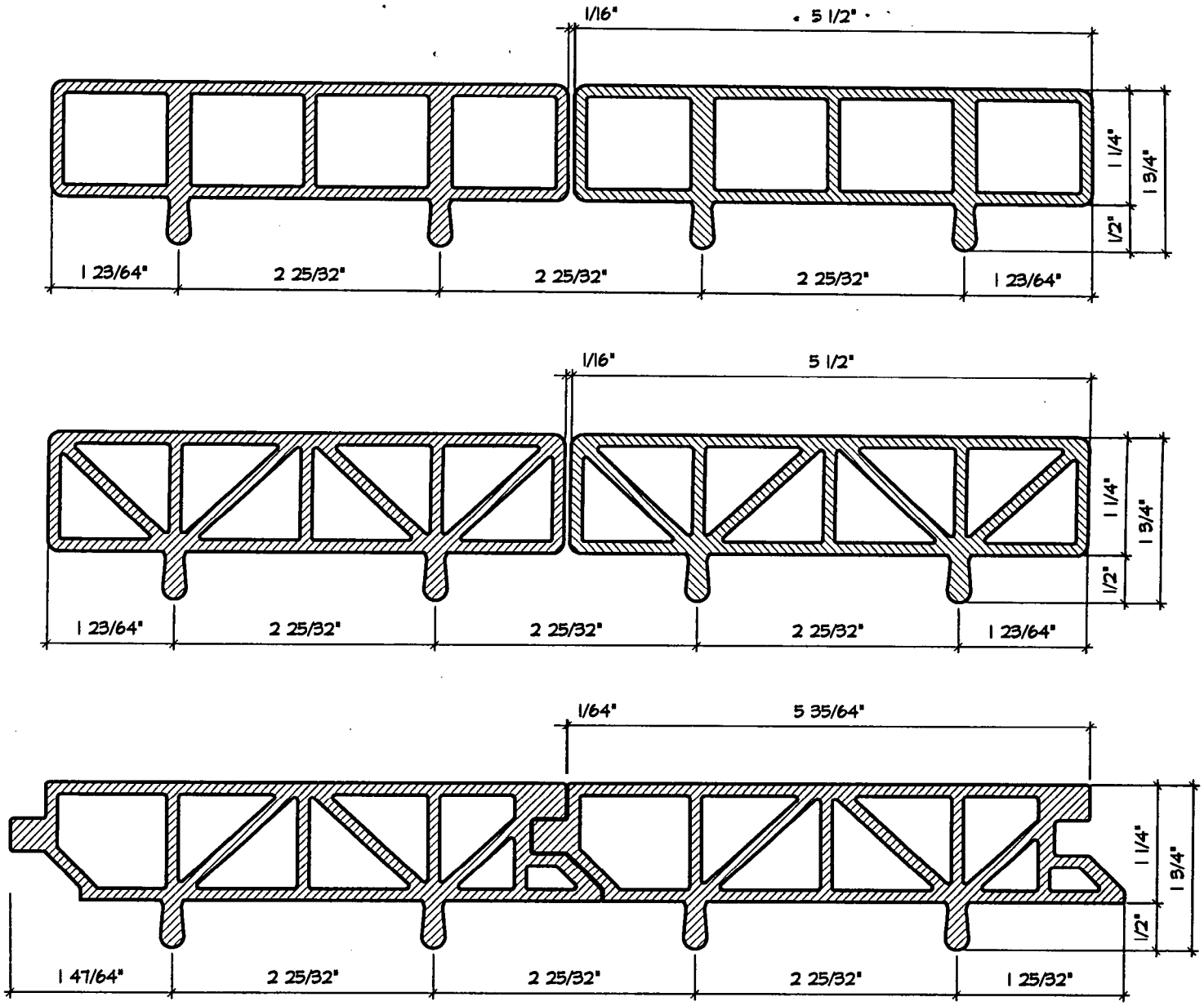
FIGURE 2.





SYNTHETIC/COMPOSITE DECKING w/ INTEGRATED IHC 1/2" RIBBING FOR SELF-SETTING INTO IHC FRAMING SYSTEM

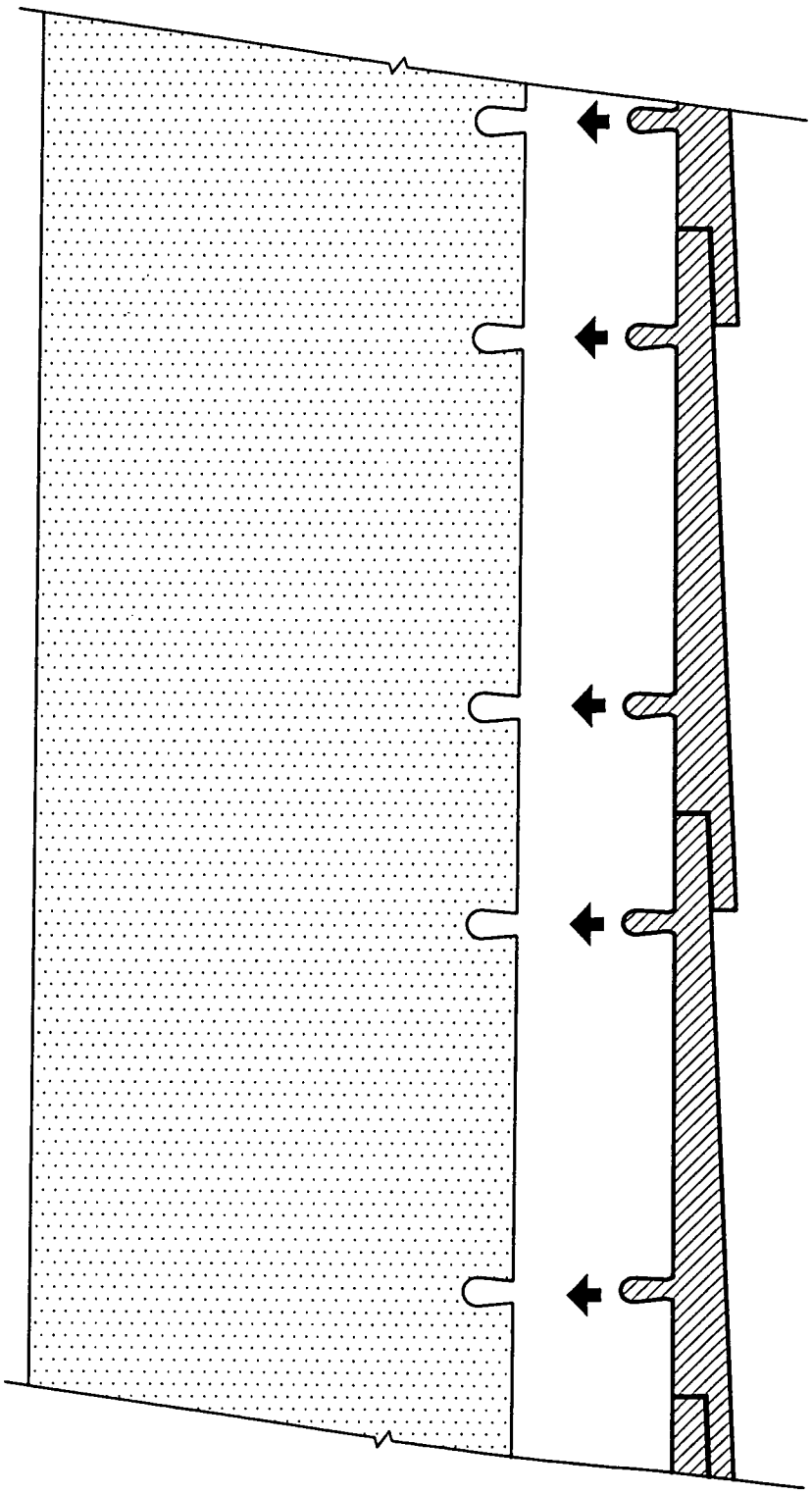
FIGURE 3.



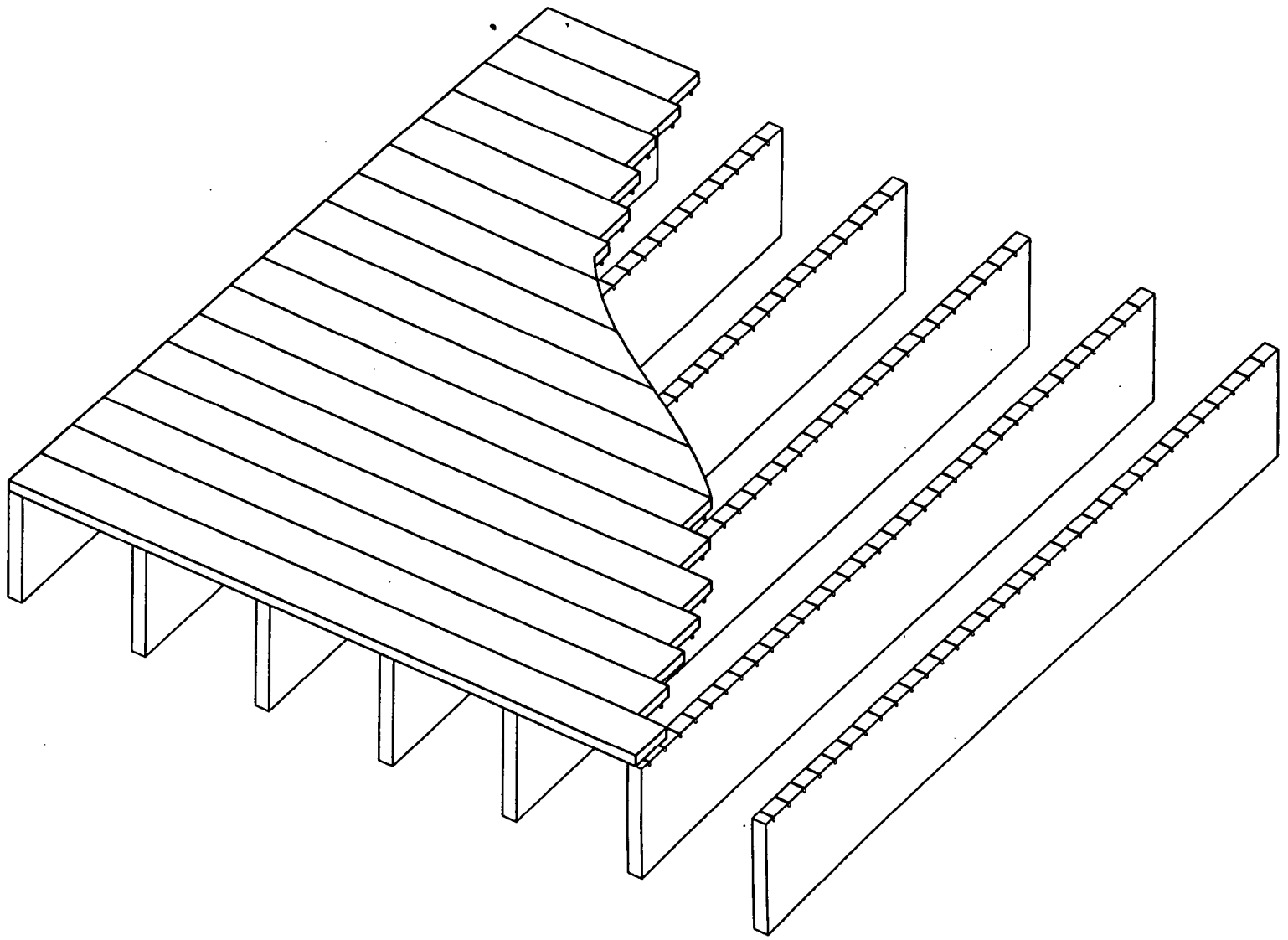
EXTRUDED PLANK MEMBERS/DECKING
W/ INTEGRATED IHC 1/2" RIBBING FOR SELF-SETTING INTO
IHC FRAMING SYSTEM

FIGURE 4.

FIGURE 5.

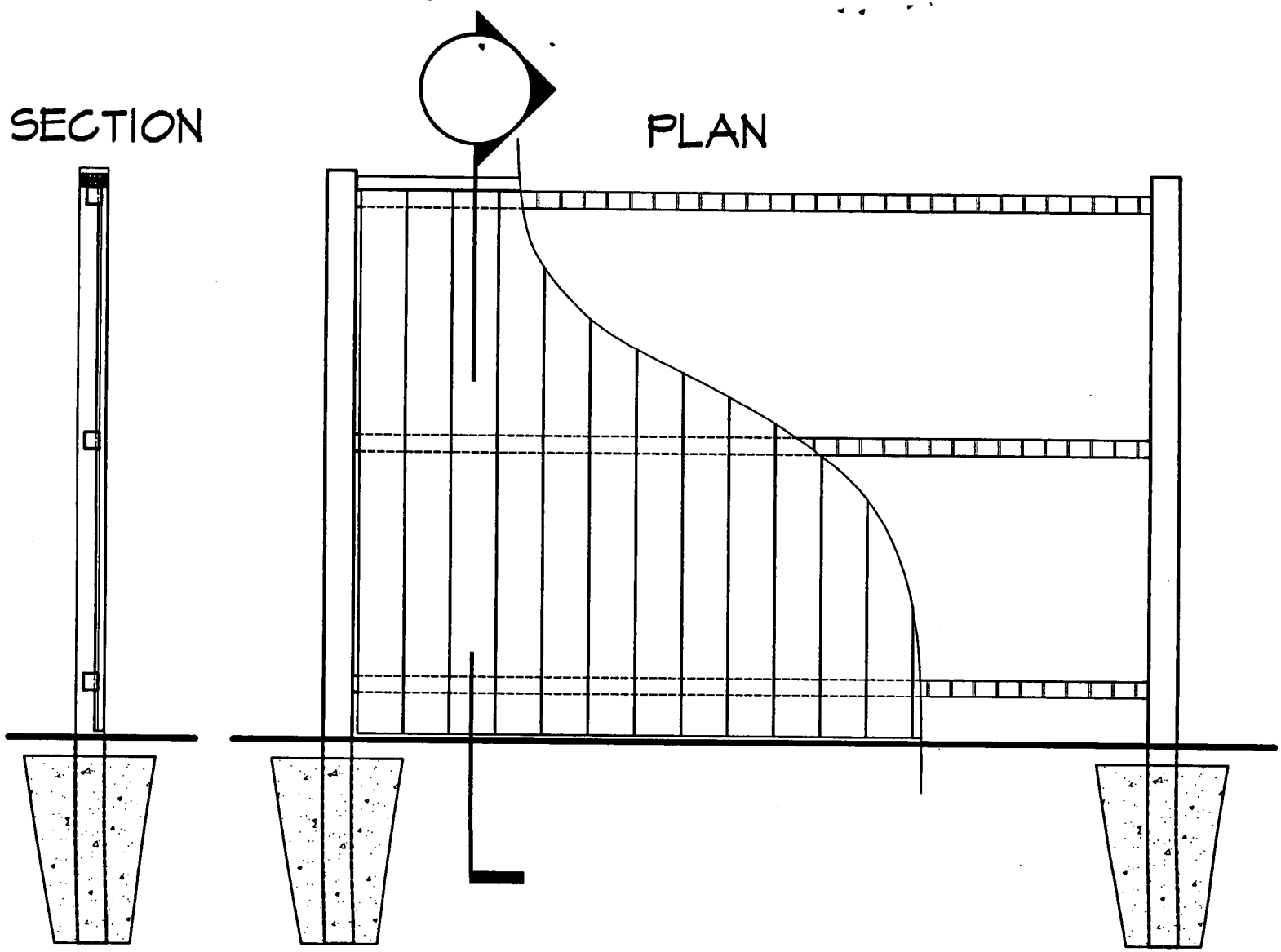


SYNTHETIC/COMPOSITE/EXTRUDED SIDING
W/ INTEGRATED IHC 1/2" RIBBING FOR SELF-SETTING INTO
IHC FRAMING SYSTEM



SYNTHETIC/COMPOSITE DECKING
W/ INTEGRATED IHC 1/2" RIBBING FOR SELF-SETTING INTO
IHC FRAMING SYSTEM

FIGURE 6.



EXTRUDED/SYNTHETIC/COMPOSITE PLANKING
W/ INTEGRATED IHC 1/2" RIBBING FOR SELF-SETTING INTO
IHC FRAMING SYSTEM (FENCING/BARRIER WALLS/ETC)

FIGURE 7.